

[54] Title of the Utility Model : Surface Light Source Device

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[Claims]

10 1. A surface light source device comprising:

a transparent plate having an insertion hole;

a light source buried in the insertion hole; and

15 a light scattering treatment surface formed on the plate, the light scattering treatment surface emitting light, that is generated by the light source and propagates through the transparent plate, outside from the plate, and the light scattering treatment surface and an area in the vicinity of the surface acting as a light emitting surface,

characterized in that,

20 a side surface of the transparent plate is formed to have a shape, wherein,

25 at a side surface area of the transparent plate, where an angle formed between a normal and a line connecting the light source and the side surface is larger than a critical angle of a total reflection of a material of the plate, when the line does not cross the light scattering treatment surface.

2. The surface light source device of claim 1, wherein at least a portion of a projected figure along a normal direction of the transparent plate is expressed by an exponential curve represented by an equation

30  $r = \exp(\theta \cdot \tan\theta_1)$  or a curve analogous to the exponential curve,

where,

$\theta_1$  is an angle equal to or larger than the critical angle of a total reflection of the material, while smaller than a right angle,

r is a distance from the light source as an origin, and  
 $\theta$  is a phase angle against a normalized line.

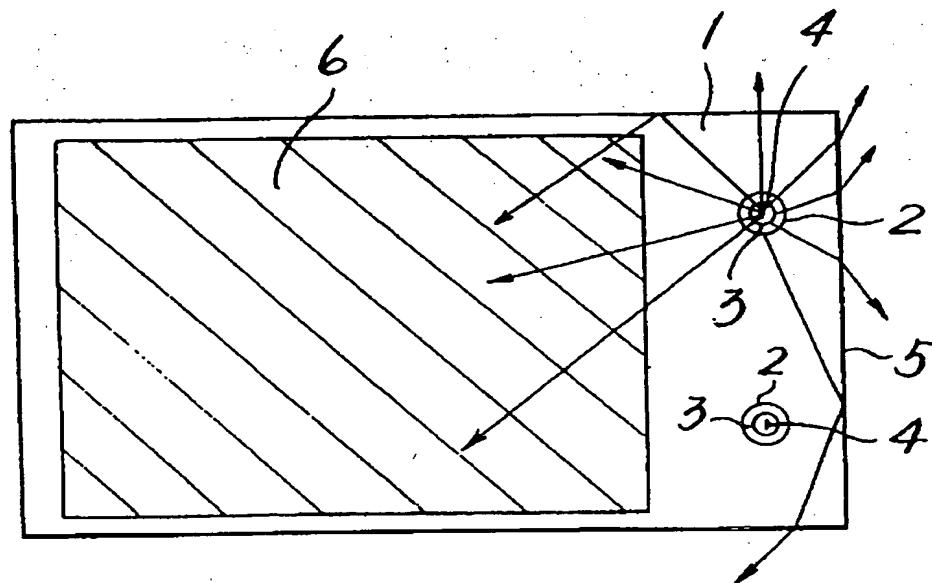
[Brief Description of the Drawings]

5 Fig. 1 is a plan view of the prior art surface light source device.  
Fig. 2 is a side view of Fig. 1.  
Figs. 3 and 4 show plan views of other prior art surface light source device.  
Fig. 5 is a side view of Fig. 4.  
10 Fig. 6 is a plan view of an example of the present utility model.  
Fig. 7 is a side view of Fig. 6.

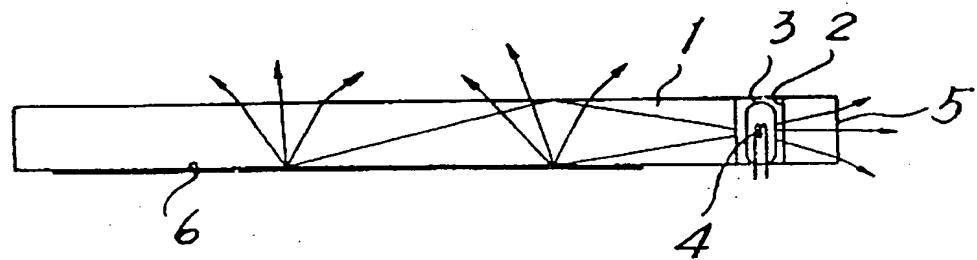
[Reference Numerals]

1. transparent plate  
15 2. insertion hole  
3. incandescent lamp  
4. filament  
5. side surface  
5a. curved portion  
20 6. light scattering treatment surface

\* 1 図



\* 2 図

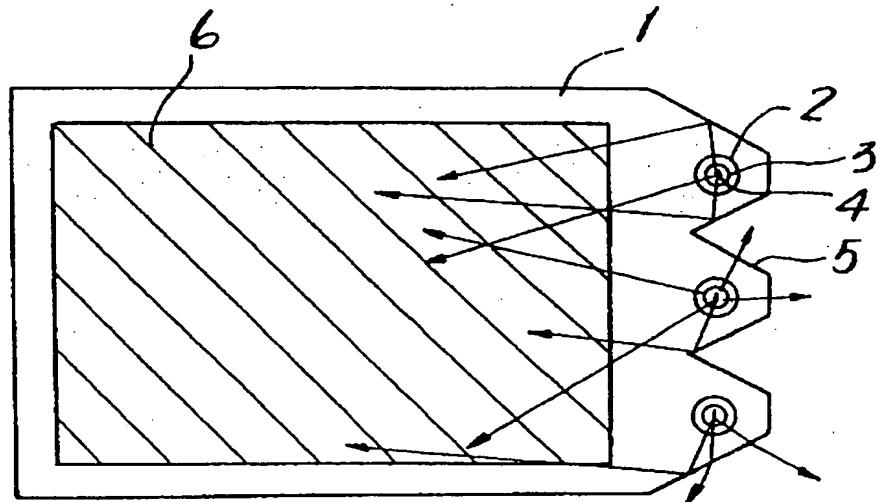


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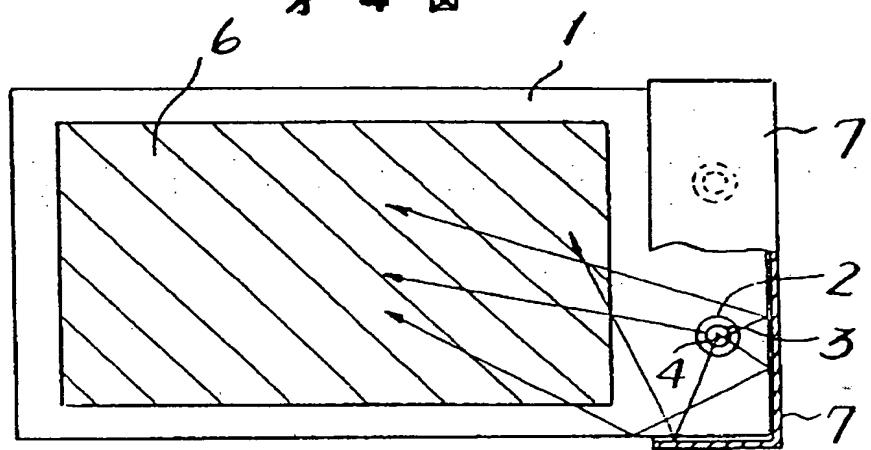
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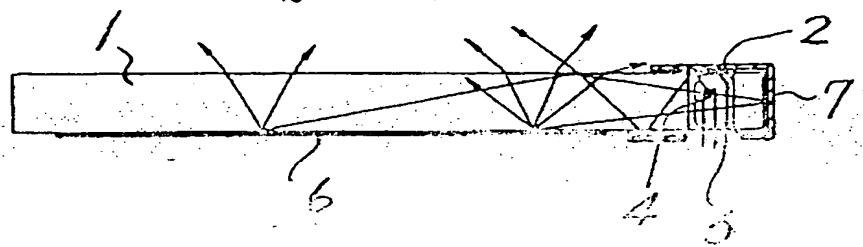
方3図



方4図



方5図

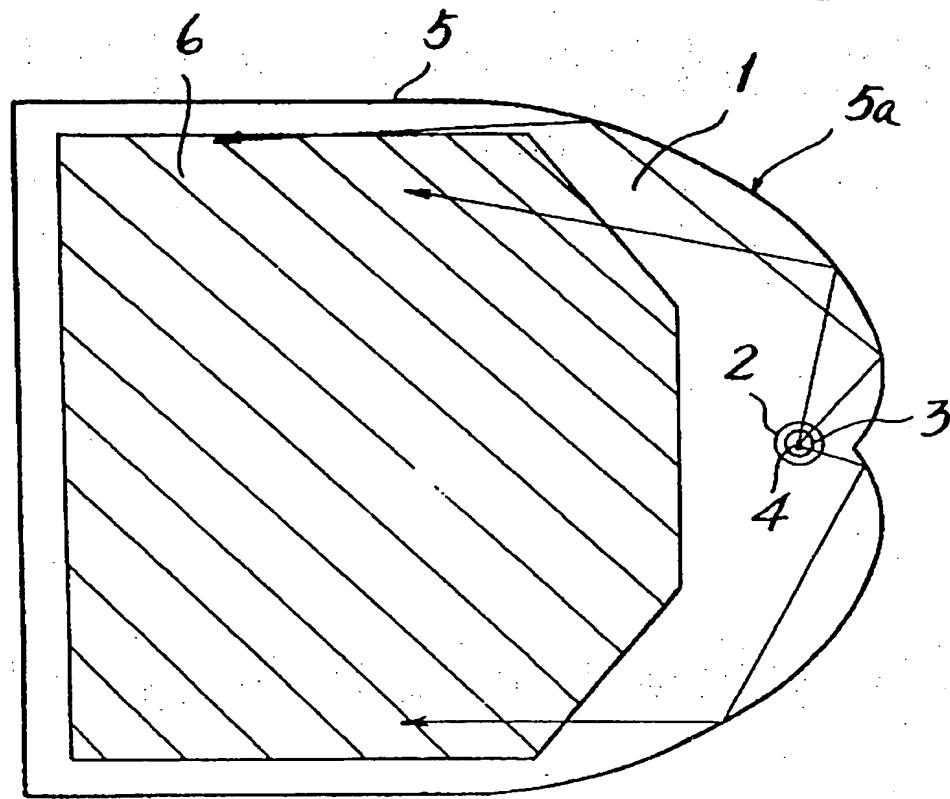


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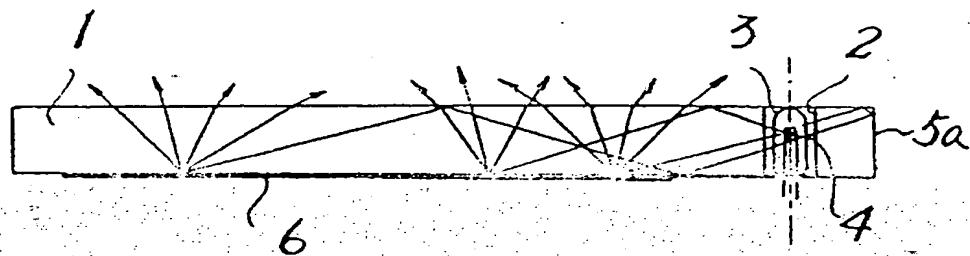
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考6図



考7図



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